

**MEMORANDUM**

**SUBJECT:** Request for a Time-Critical Removal Action at Norphlet Chemical, Inc.  
Norphlet, Union County, Arkansas

**FROM:** William Rhotenberry, On-Scene Coordinator,  
Response and Prevention Branch (6SF-PE)

**TO:** Samuel Coleman, P.E., Director  
Superfund Division (SF)

**THRU:** Mark Hansen, Associate Director  
Prevention and Response Branch (6SF-P)

**I. PURPOSE**

This memorandum seeks approval for a Removal Action pursuant to Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601 et seq. at the Norphlet Chemical Site, (or Site) located in Norphlet, Union County, Arkansas. The proposed removal action involves the transfer, removal and disposal of hazardous substances from the Site which are being stored in an unsafe manner.

The action is expected to exceed the Statutory Limitation of \$2 million. This memorandum requests a waiver from the Statutory Limitation based on the Emergency Exemption criteria. The estimated cost of the proposed action is \$4 million.

This action meets the criteria for initiating a removal action under the National Contingency Plan (NCP), 40 CFR §300.415. The duration of this action is expected to be less than 12 months.

**II. SITE CONDITIONS AND BACKGROUND**

CERCLIS #: ARD008049207

Site ID #: A6N8

## A. Site Description

### 1. Removal Site Evaluation

Norphlet Chemical Inc. (NCI) is located outside El Dorado, Arkansas at the location of the former Macmillan Oil Refinery (a previous Non-NPL Removal Action). NCI is a chemical manufacturing facility in the business of producing a refrigerant (HFC-134A) used in automobiles. The primary raw materials used for producing this product are Anhydrous Hydrogen Fluoride (AHF), Trichloroethylene (TCE), and a catalyst. The company attempted to produce the intended product but was unable to do so. In September 2008, the company laid off all of its employees.

EPA became aware of this facility in March 2009 and immediately informed the Arkansas Department of Environmental Quality (ADEQ). EPA offered its assistance if deemed necessary by the ADEQ. On April 15, 2009, representatives of the Department of Homeland Security (DHS) conducted an Infrastructure Protection Inspection of the facility and were alarmed with its condition and the fact that it had been abandoned. DHS immediately contacted EPA about their concerns with the site. The major concern was that the abandoned site had above ground storage tanks containing Anhydrous Hydrogen Fluoride (AHF) and mixtures of AHF, TCE, and other intermediate refrigerants. In addition, there was concern about the condition of the tanks. EPA and DHS contacted State authorities and participated in a conference call regarding the site. On April 16, EPA received a request from ADEQ to address the situation at the site.

EPA dispatched their START Contractors to begin air monitoring. EPA On-Scene Coordinator (OSC) Jones arrived on-site on Friday, April 17, 2009 and met with Federal, State, County, and City officials and evaluated the site. OSC Jones determined that an Imminent and Substantial Endangerment existed as a result of the abandonment of the facility, the conditions of the tankage, and the close proximity of the school and surrounding residents to the facility. Union County Judge Bobby Edmonds issued an emergency order and due to the close proximity of the school, a decision was made to close the school on Friday, April 17th.

EPA immediately mobilized their ERRS Contractor to the site and began planning for transfer of the AHF mixtures from the onsite tanks into tanker trailers which would then be shipped offsite for disposal.

### 2. Physical location

NCI is located in a residential area with the Norphlet Public School (K-12), located directly adjacent to the west side of the site. The site address is 600 Macmillan Road, Union County, Norphlet, Arkansas. The site encompasses approximately 94 acres. The coordinates are Latitude 33.3093000 and Longitude -92.6560000. A Site Area Map is provided in **Attachment 2**

### 3. Background

NCI began operations in August of 2007 but was faced with immediate financial and technical problems. All test runs which attempted to produce the intermediate refrigerant necessary to produce R-134A were unsuccessful. In January of 2008 the shareholders and the Board of Directors asked CEO John Garrison and his son Jeff Garrison (President) to step down from their positions. Jones Hamilton Company agreed to loan NCI money to keep operating if certain conditions were met. By September of 2008 almost all of the plant employees had been laid off and operations ceased.

The primary chemicals of concern (COCs) at NCI are Anhydrous Hydrogen Fluoride (AHF) and Trichloroethylene (TCE), both of which pose an immediate threat to human health and the environment in either an aqueous or vapor form.

### 4. Site Characteristics

NCI is an abandoned refrigerant manufacturing facility. The site is located on a 94 acre property formerly known as the Macmillan Oil Refinery site. The site has numerous above ground storage tanks and buildings which were part of the old Macmillan Refinery. NCI is composed of 6 main areas; 1) Office Building, 2) Main Process Area which includes the Control Room, the Process Tanks and the Plant Scrubber, 3) Tank Farm Area, 4) Tanker Truck Loading Dock, 5) Railroad Loading Terminal and 6) Laboratory. Surface water drainage is easterly into Haynes Creek which empties into the Quachita River.

### 5. Release or threatened release into the environment of a hazardous substance, pollutant or contaminant

The two main Chemicals of Concern (COC's) are Hydrogen Fluoride (HF) and Trichloroethylene (TCE). Both of these chemicals are "hazardous substances" as defined by Section 101(14) of CERCLA, 42U.S.C. § 9601(14), and 40 CFR § 302.4.

The AHF and various mixtures of TCE and refrigerant intermediates were being stored in 5 above ground storage tanks located in the Main Process Area adjacent to the Control Room.

DESCRIPTION	% of LIQUID MIXTURE	TOTAL CAPACITY (gal)	TOTAL VOLUME(gal)
TT10	75%AHF, 25%TCE intermediate refrigerants	13,800	13,400
TT11	4%AHF 96%TCE intermediate refrigerants	13,800	10,849

TT13	AHF mixed with OF	11,550	2000
TT02	TCE	18,213	2000
TT01	AHF	42,000	7800

The poor condition of the tanks containing the HF and refrigerant mixtures was verified by ultrasound testing. The ultrasound tests indicated a potential for a catastrophic release of the HF mixtures into the atmosphere. HF when released has a gas pressure less than air (.7) and will form a vapor cloud.

6. NPL status

The Site is not being considered for listing on the National Priorities List.

7. Maps, pictures and other graphic representations

Attachment 1 (Enforcement Confidential/FOIA Exempt).

Attachment 2 Site location map

Attachment 3 Site sketch

B. Other Actions to Date

1. Previous actions

DHS conducted an Infrastructure Protection Inspection at NCI on April 15, 2009 and immediately contacted EPA with concerns about the site. EPA had learned about the site in March of 2009 and had already contacted ADEQ to see if assistance was required in addressing the site. On April 16<sup>th</sup> the ADEQ sent a letter to EPA requesting assistance at the site.

2. Current actions

On April 16, 2009 the ADEQ referred the Site to EPA-RPB to mitigate the imminent and substantial endangerment present at the site. Measures taken and completed since that time include the transfer of all the AHF mixtures being stored in onsite tanks to tanker trailers as well as the decontamination of all plant piping and tankage which held the AHF mixtures and TCE. Ongoing actions include the disposal of the AHF mixtures via incineration at the Veolia AES Incinerator in Port Arthur, TX. as well as the segregation and disposal of all hazardous chemicals located in the onsite laboratory.

C. State and Local Authorities' Roles

1. State and local actions to date

The ADEQ requested EPA to respond and mitigate the emergency conditions at the site on April 16, 2009.

2. Potential for continued State/local response

There is no potential for further state/local response.

### **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

#### **A. Threats to Public Health or Welfare or the Environment**

Current Site conditions meet the following factors, which indicate that there is a threat to the public health, welfare, and the environment, and that a removal action is appropriate under Section 300.415(b)(2) of the National Contingency Plan (NCP), 40 C.F.R. § 300.415(b)(2). Any or all of these factors may be present at a site, yet any one factor may determine the appropriateness of a removal action under CERCLA authority.

#### **Exposure to Human Populations, Animals or the Food Chain, NCP Section 300.415(b)(2)(i)**

There is potential for exposure of human populations and animals to anhydrous hydrogen fluoride and trichloroethylene which are hazardous substances as defined at CERCLA Section 101(14), 42 U.S.C. § 9601(14), and further defined at 40 C.F.R. § 302.4. AHF has a very low boiling point and upon release to the air forms a vapor cloud which will move offsite directed by prevailing winds. Although the site is partially fenced, it is not completely secure and does give trespassers the ability to access the site. In addition there is a public school located less than ¼ miles from the site.

#### **Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release, NCP Section 300.415(b)(2)(iii):**

Approximately 36,000 gallons of liquids containing varying amounts of both Anhydrous Hydrogen Fluoride (AHF) and Trichloroethylene (TCE) along with several types of refrigerants were present in 5 above ground steel tanks. The high pressures created by the refrigerants and the corrosivity caused by even a small amount of moisture combining with the AHF was attacking the steel tanks. An ultrasound test on one of the tanks (TT-13) found an area where the steel had been thinned to the point of being termed “critical” and was in danger of failure. Failure to implement an immediate transfer of the material in the tank could lead to a catastrophic release of AHF.

#### **Contamination of Drinking Water Supplies or Sensitive Ecosystems, NCP Section 300.415(b)(2)(ii)**

There is no evidence that drinking water has been affected by the site. The City of Norphlet has three drinking water wells completed in the Sparta Sands.

#### **Contaminants in Soils, NCP Section 300.415(b) (2) (iv)**

There is no evidence that soils have been contaminated as a result of NCI site activities.

#### **Weather Conditions That May Cause the Release or Migration of Hazardous Substances, NCP Section 300.415 (b) (2) (v)**

The boiling point of Hydrogen Fluoride is 68 degrees Fahrenheit. If there was a tank failure and release of HF, it would immediately form a toxic vapor cloud and be subject to the prevailing wind currents. Spring time prevailing wind direction is typically from the South however it can vary due to numerous rainfall events which are typically preceded with northerly winds.

#### **Availability of Other Mechanisms, NCP Section 300.415 (b) (2) (vii)**

The ADEQ has referred the Site to EPA. The State has provided site security but has been unable to provide any additional resources for the removal action. EPA has been and will continue to work closely with the local, county and State governments regarding all site activities.

#### **B. Threats to the Environment**

### **IV. ENDANGERMENT DETERMINATION**

Actual or threatened releases of hazardous substances, pollutants or contaminants from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to the public health or welfare or the environment.

### **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

#### **A. Proposed Actions**

##### **1. Proposed Action Description**

The proposed action calls for the transfer and subsequent transportation and disposal of the AHF/TCE mixtures in the 5 above ground storage tanks located in the Main Process Area. In addition all plant piping and any other tankage which contained AHF/TCE will be flushed and decontaminated until the entire plant is "HF free". Hazardous chemicals in the onsite laboratory will also be segregated, profiled and shipped offsite for disposal.

##### **2. Applicable or relevant and appropriate requirements (ARARs)**

This removal action will be conducted to eliminate the actual or potential release of a

hazardous substance, pollutant, or contaminant to the environment, pursuant to CERCLA, 42 U.S.C. § 9601 et seq. in a manner consistent with the NCP, 40 C.F.R. Part 300. As per 40 C.F.R. § 300.415(i), Fund-financed removal actions pursuant to CERCLA Section 104, 42 U.S.C. § 9604, and removal actions pursuant to CERCLA Section 106, 42 U.S.C. § 9606 shall, to the extent practicable considering the exigencies of the situation, attain the applicable or relevant and appropriate requirements under Federal environmental law, including the Toxic Substance and Control Act (TSCA), 15 U.S.C. § 2601 et seq., the Safe Drinking Water Act (SDWA), 42 U.S.C. § 300 et seq., the Clean Air Act (CAA), 42 U.S.C. § 7401 et seq., Clean Water Act (CWA), 33 U.S.C. § 1251 et seq., the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901 et seq., or any promulgated standard, applicable or relevant and appropriate requirements, criteria, or limitation under a state environmental or facility citing law that is more stringent than any Federal standard, requirement, criteria, or limitation contained in a program approved, authorized or delegated by the Administrator and identified to the President by the state.

Due to the fact that consolidation and off-site disposal are the principal elements of this removal action, RCRA waste analysis requirements found at 40 C.F.R. §§ 261.20 and 261.30, RCRA manifesting requirements found at 40 C.F.R. § 262.20, and RCRA packaging and labeling requirements found at 40 C.F.R. § 262.30 are deemed to be relevant and appropriate requirements for this removal action. All hazardous substances, pollutants, or contaminants removed off-site for treatment, storage, or disposal shall be treated, stored, or disposed at a facility in compliance, as determined by the EPA, pursuant to 40 CFR § 300.440. All off-site transportation of hazardous materials will be performed in conformity with U.S. Department of Transportation (DOT) requirements at 49 CFR § 172.

All disposal will be in accordance with EPA's Off-site Rule, 40 CFR § 300.440, and CERCLA Section 121(d) (3), 42 U.S.C. § 9621(d) (3), and all transportation will be in accordance with Department of Transportation rules and regulations. Due to the unusual nature of the wastes, the tanker trailers leased from Jack B Kelley to transport the wastes to Veolia's disposal facility in Port Arthur, TX require a "Special Permit" from the U.S. Department of Transportation. The permit expires on August 31, 2009.

### 3. Project Schedule

Response actions began on April 16, 2009. Completion of the proposed removal action is expected within 5 months of start date.

#### B. Estimated Costs

#### **ESTIMATED COSTS**

#### **ESTIMATED COST CLASSIC EMERGENCY RESPONSE ACTION**

COST CATEGORY		COST TO DATE	
EXTRAMURAL COST			
ERRS Contractor		\$ 3,500,000	
Site Contingency (20%)		\$ 700,000	

***OTHER EXTRAMURAL COSTS NOT FUNDED FROM THE REGIONAL ALLOWANCE***

START Contractor	\$ 500,000
Total Emergency Removal Costs	\$ 4,700,000

**VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN**

If this action is not taken at the Site, the potential for human exposure to contaminants at the Site will remain unabated. The contamination will continue to be dispersed into the surrounding area resulting in further exposure to the public and wildlife from the contamination.

**VII. ENFORCEMENT**

See Enforcement Strategy: Attachment 1 (Enforcement Confidential/FOIA exempt)  
The EPA costs for this removal action based on full-time accounting practices that will be eligible for cost recovery are estimated to be:

$\$4,700,000$  (extramural costs) +  $\$???,???$  (intramural costs) +  $\$$  (52.61% of Total  
Direct {Indirect Cost}) =  **$\$??$  (EPA Estimated Costs)**

Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2002. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action.

**VIII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN**

If this action is not taken at the Site, conditions at the Site can be expected to continue to deteriorate, and the threats associated with the presence of hazardous substances will persist. Delayed action will increase both environmental and health risks posed by the release or threat of release of hazardous substances, including corrosives and caustic substances.

**IX. OUTSTANDING POLICY ISSUES**

There are no outstanding policy issues associated with this Site.

**X. RECOMMENDATION**

This Action Memorandum documents the approval of the time-critical removal action to be



conducted at the Norphlet Chemical Site, in Norphlet, Union County, Arkansas, developed in accordance with CERCLA, 42 U.S.C. § 9601 et seq., and consistent with the NCP, 40 C.F.R. Part 300. This decision is based on the administrative record for the Site.

Conditions at the Site meet the criteria as defined by Section 300.415(b) (2) of the NCP, 40 C.F.R. § 300.415(b) (2), for a removal action. The total project ceiling for the Site as approved by the Superfund Division Director is \$4,700,000 with \$4,200,000 coming from the CERCLA removal allowance.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

Attachments